

PTO/SB/21 (02-04)

Approved for use through 07/31/2006. OMB 0651-0031

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<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Application Number	10/772,153
	Filing Date	02/04/2004
	First Named Inventor	Chen
	Art Unit	
	Examiner Name	
Total Number of Pages in This Submission	Attorney Docket Number	SC-03-01

ENCLOSURES (Check all that apply)		
<input type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance communication to Technology Center (TC)
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment/Reply	<input type="checkbox"/> Petition	<input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Change of Correspondence Address	<input type="checkbox"/> Other Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Terminal Disclaimer	
<input checked="" type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> Request for Refund	
<input type="checkbox"/> Certified Copy of Priority Document(s)	<input type="checkbox"/> CD, Number of CD(s) _____	
<input type="checkbox"/> Response to Missing Parts/Incomplete Application	Remarks	
<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	Robert O. Groover III
Signature	
Date	3/31/2004

CERTIFICATE OF TRANSMISSION/MAILING			
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.			
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Signature		Date	

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Chen : Art Unit:  
Serial No. 10/772,153 : Examiner:  
Filed: 02/04/2004 : Atty's Docket: SC-03-01  
For: Roller Cone Bit Design Using Multi-Objective Optimization

**INFORMATION DISCLOSURE STATEMENT**

Honorable Commissioner of Patents and Trademarks  
Washington, DC 20231

Sir:

The accompanying form PTO-1449 lists one or more documents which may be considered material to the examination of this application. A copy of each document is provided, if available.

Applicant reserves the right to establish the patentability of the claimed invention over any of the listed documents should they be applied thereagainst as references, and/or to prove that some of these documents may not be prior art, may not be within an analogous field of art, and/or may not be enabling for the teachings they purport to offer.

This statement should not be construed as a representation that an exhaustive search has been made, nor that more material information does not exist.

The Examiner is specifically requested to conduct an independent and thorough review of the documents, and to form his own opinions as to the significance of those documents to patentability of the claimed inventions, regardless of any of the foregoing statements concerning the significance of the references. The foregoing statements are made in good faith, and in compliance with the duty of disclosure; but they cannot substitute for the Examiner's specialized expertise, nor are they intended to derogate from the Examiner's official duty to assess patentability.

It is also respectfully noted that the submission of this material is **not** intended to displace the Examiner's professional ability and duty to search. Indeed, the Examiner is specifically requested **not** to rely on the materials submitted herewith, but to conduct a full and independent search.

It is respectfully requested that the Examiner initial and return a copy of the enclosed PTO-1449, to indicate in the file of this patent application that the documents have been considered.

Respectfully submitted,

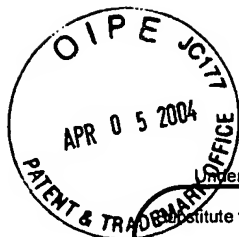
Robert O. Groover III Registration No. 30,059

Agent for Applicant

11330 Valleydale Drive, Dallas, TX 75230

972-363-3038

Date: March 31, 2004



PTO/SB/08B (08-03)

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)		<b>Complete if Known</b>	
		Application Number	10/772,153
		Filing Date	02/04/2004
		First Named Inventor	Chen
		Art Unit	
		Examiner Name	
Sheet 1	of 4	Attorney Docket Number	SC-03-01

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	1	DEKUM MA, The Operational Mechanics of the Rock Bit, 1996, Petroleum Industry Press, Beijing, China.	
	2	D. MA, D. ZHOU, & R. DENG, The Computer Simulation of the Interaction Between Roller Bit and Rock, 1995.	
	3	SHILIN CHEN, Linear and Nonlinear Dynamics of Drillstrings, 1994-1995.	
	4	D. MA & J.J. AZAR, Dynamics of Roller Cone Bits, 12/1985.	
	5	D.K. MA & S.L. YANG, Kinematics of the Roller Cone Bit, 06/1985.	
	6	D. MA & J.J. AZAR, A New Way to Characterize the Gouging-Scraping Action of Roller Cone Bits, 1989.	
	7	Russian bit catalog listing items "III 190,5 T-TsV-1" and "111 109,5 TKZ-TsV" (date prior to 1997).	
	8	L.E. HIBBS, JR., et al., Diamond Compact Cutter Studies for Geothermal Bit Design (Nov. 1978).	
	9	M.C. SHEPPARD, et al., "Forces at the Teeth of a Drilling Rollercone Bit: Theory and Experiment", Proceedings: 1988 SPE Annual Technical Conference and Exhibition; Houston, TX,	
		USA, Oct. 2-5, 1988, Vol. Delta, 1988, pp. 253-260 18042, XP002266080, Soc. Pet Eng AIME Pap SPE 1988 Publ by Soc of Petroleum Engineers of AIME, Richardson, TX	

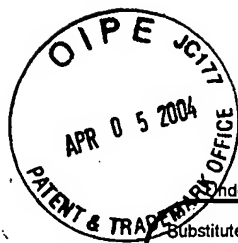
Examiner Signature	Date Considered
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

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Substitute for form 1449/PTO

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Application Number	10/772,153
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First Named Inventor	Chen
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Attorney Docket Number	SC-03-01

Sheet	2	of	4
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	10	ADAM T. BOURGOYNE JR., et al., Applied Drilling Engineering, Society of Petroleum Engineers Textbook Series (1991).	
	11	J.P. NGUYEN, Oil and Gas Field Development Techniques: Drilling (translation 1996, from French original 1993).	
	12	T.M. WARREN et al., "Drag-Bit Performance Modeling", SPE Drill Eng. June 1989, Vol. 4, No. 2, pp. 119-127 15618, XP002266079.	
	13	Making Hole, part of Rotary Drilling Series, edited by Charles Kirkley (1983).	
	14	T.M. WARREN, "Factors Affecting Torque for A Roller Cone Bit", JPT J PET Technol Sept. 1984, Vol. 36, No. 10, pp. 1500-1508, XP002266078.	
	15	Drilling Mud, part of Rotary Drilling Series, edited by Charles Kirkley (1984).	
	16	H.G. BENSON, Rock Bit Design, Selection and Evaluation, presented at the spring meeting of the pacific coast district, API Division of Production, Los Angeles, May 1956.	
	17	J.C. ESTES, Selecting the Property Rotary Rock Bit, JPT, Nov., 1971, pp. 1359-1367.	
	18	WILSON C. CHIN, Wave Propagation in Petroleum Engineering (1994).	
	19	SIKARSKIE et al., Penetration Problems in Rock Mechanics, ASME Rock Mechanics Symposium, 1973.	

Examiner Signature	Date Considered
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	<b>Filing Date</b>		02/04/2004		
	<b>First Named Inventor</b>		Chen		
	<b>Art Unit</b>				
	<b>Examiner Name</b>				
Sheet	3	of	4	<b>Attorney Docket Number</b>	SC-03-01

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	20	DYKSTRA et al., Experimental Evaluations of Drill String Dynamics, SPE 28323, 1994.	
	21	KENNER and ISBELL, Dynamic Analysis Reveals Stability of Roller Cone Rock Bits, SPE 28314, 1994.	
	22	Brochure entitled "Twist & Shout", (SB2255, 1001), 4 pages.	
	23	Plaintiff's Original Complaint for Patent Infringement and Jury Demand, filed September 6, 2002, in the U.S. District Court for the Eastern District of Texas, ✓	
		Sherman Division, Civil Action No. 4-02CV269, Halliburton Energy Services, Inc. v. Smith International, Inc., 4 pages, 09/06/2002. ✓	
	24	Answer and Counterclaim of Smith International, filed March 14, 2003, in the U.S. District Court for the Eastern District of Texas, Sherman Division, ✓	
		Civil Action No. 4-02CV269, Halliburton Energy Services, Inc. v. Smith International, Inc., 6 pages, 03/14/2003. ✓	
	25	Response of Plaintiff and Counterclaim Defendant to Defendant's Counterclaim of Declaratory Judgment, filed April 3, 2003, in the U.S. District Court for the Eastern	
		District of Texas, Sherman Division, Civil Action No. 4-02CV269, Halliburton Energy Services, Inc. v. Smith International, Inc., 3 pages, 04/03/2003.	

<b>Examiner Signature</b>		<b>Date Considered</b>	
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	<b>First Named Inventor</b>		Chen		
	<b>Art Unit</b>				
	<b>Examiner Name</b>				
<b>Sheet</b>	4	<b>of</b>	4	<b>Attorney Docket Number</b>	SC-03-01

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	26	First Amended Answer and Counterclaim of Smith International, filed October 9, 2003, in the U.S. District Court for the Eastern District of Texas, Sherman Division, Civil Action No. 4-02CV269, Halliburton Energy Services, Inc. v. Smith International, Inc., 8 pages, 10/09/2003.	
	27	Memorandum Opinion of Judge Davis, signed February 13, 2004, in the U.S. District Court for the Eastern District of Texas, Sherman Division, Civil Action No. 4-02CV269, Halliburton Energy Services, Inc. v. Smith International, Inc., 37 pages (including fax coversheet), 02/19/2004.	
	28	B.L. STEKLYANOV et al., Improving The Effectiveness of Drilling Tools, Information Summary, Central Institute for Scientific and Technical Information and Technical and Economic Research on Chemical and Petroleum Machine Building, Series KhM-3, Oil Industry Machine Building, BSSR Republic Scientific and Technical Library (1991).	

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